
221 SPEED ZONING CONCEPTS

The majority of operators of motor vehicles drive at a speed that they consider reasonable and prudent for existing conditions. Posted limits that are set higher or lower than those dictated by roadway and traffic conditions are ignored by the majority of motorists. A speed limit should be set so that the majority of motorists observe it voluntarily and enforcement can be directed to the minority.

Speed zoning in Arizona is defined as the process of determining the numerical maximum speed for a defined segment of roadway on the basis of a traffic engineering investigation or study. Speed zoning is based on the principle of setting the limit as near as practicable to the speed that 85% of the drivers consider to be reasonable and prudent, i.e., the 85th percentile speed. The 85th percentile correlates to the first standard deviation above the mean; statistically the first standard deviation is the average speed of motorists above the mean speed.

An engineering and traffic investigation should show roadway conditions to be satisfactory for that speed. An engineering and traffic investigation evaluates the operating conditions on the highway and reviews the roadway characteristics and speeds that motorists consider reasonable. Speed limits established by an engineering and traffic investigation encourage voluntary compliance because they appear reasonable to the majority of motorists.

The determination of design speeds and speed zones are two separate and distinct activities that should not be combined to establish speed zones that are unreasonable to motorists. The design speed is selected to establish roadway design criteria such as width, alignment, and profile. Conversely, once the roadway is constructed, the driver operates at a speed they determine to be reasonable and prudent, usually represented by the 85th percentile speed. The design speed of the roadway or of roadway features should not be used as a basis for limiting the maximum speed limit.